

## **APPENDIX R**

### **U.S. FISH AND WILDLIFE SERVICE'S BIOLOGICAL OPINION**



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Ecological Services  
Carlsbad Fish and Wildlife Office  
6010 Hidden Valley Road  
Carlsbad, California 92011



In Reply Refer To:  
FWS-ERIV-5068.2

Apr 20 2007

Michael J. Boyle, Chief  
Environmental Gas Branch I  
Office of Energy Projects  
Federal Energy Regulatory Commission  
Washington, D.C. 20426

Re: Formal Section 7 Consultation on the proposed North Baja Pipeline Expansion Project;  
La Paz County, Arizona; Riverside County, California; and Imperial County, California  
(1-6-05-F-5068.2)

Dear Mr. Boyle:

This document transmits our biological opinion based on our review of the proposed North Baja Pipeline Expansion Project (Project or proposed Project) located in La Paz County, Arizona; Riverside County, California; and Imperial County, California; and its effects on desert tortoise (*Gopherus agassizi*), desert tortoise critical habitat, and Peirson's milk-vetch (*Astragalus magdalenae* var. *peirsonii*) in accordance with section 7 of the Endangered Species Act (Act) of 1973, as amended (16 United States Code 1531 *et seq.*). Your September 27, 2006, request for formal consultation was received on September 29, 2006.

This biological opinion is based on information provided in the September 2006 draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR), which was prepared to also serve as the Biological Assessment, survey reports, a site visit on July 6, 2006, and other sources of information. The project description has been modified to reflect the adoption of the Arrowhead Alternative, a minor facility change that North Baja Pipeline, LLC (North Baja) incorporated into its proposed action after the issuance of the draft EIS/EIR. A complete administrative record of this consultation is on file at the Carlsbad Fish and Wildlife Office.

### CONSULTATION HISTORY

A request for a species list was received by the Service on April 15, 2005.

A meeting was attended by Kurt Roblek, Carlsbad Fish and Wildlife Office, at the Navy Office in San Diego on August 25, 2005, in which endangered species issues and timeline were discussed.



On September 27, 2005, Kurt Roblek met with Federal Energy Regulatory Commission (FERC) representatives and others to discuss more issues and the timeline for section 7 consultation and the draft EIS/EIR.

On December 30, 2005, the Service received a letter requesting a species list for a newly incorporated portion of the proposed project, the Imperial Irrigation District (IID) Lateral. In a phone call conversation on March 3, 2006, it was agreed that Peirson's milk-vetch and the flat-tailed horned lizard (*Phrynosoma mcallii*; proposed for listing at that time) were species of concern on the IID Lateral.

Survey reports for desert tortoise, Peirson's milk-vetch, Yuma clapper rail (*Rallus longirostris yumanensis*), and southwestern willow flycatcher (*Empidonax trailii extimus*) were received on February 7, 2006.

Penny Eckert of Tetrattech, EC Inc., escorted Tyler Grant, Carlsbad Fish and Wildlife Office, on a site visit on July 6, 2006. The length of the proposed project was driven and points of concern were visited.

The draft EIS/EIR was received on September 25, 2006.

The Service received the FERC request on September 29, 2006, for initiation of formal section 7 consultation on desert tortoise and Peirson's milk-vetch. The FERC determined the project would have no effect on the bald eagle (*Haliaeetus leucocephalus*), brown pelican (*Pelecanus occidentalis*), bonytail chub (*Gilia elegans*), and desert pupfish (*Cyprinodon macularis*). The FERC also determined that the project may affect, but would not be likely to adversely affect razorback sucker (*Xyrauchen texanus*) and its critical habitat, southwestern willow flycatcher, and Yuma clapper rail. The Service concurred with these "not likely to adversely affect" determinations in a letter dated November 11, 2006.

A draft of the Biological Opinion was provided to FERC representatives on March 28, 2007. FERC representatives reviewed the draft Biological Opinion. At this time, FERC representatives also informed the Service that the Arrowhead Alternative analyzed in the draft EIS/EIR would be adopted in the final EIS/EIR. The Arrowhead Alternative would have no effect on listed species.

## DESCRIPTION OF THE PROPOSED ACTION

North Baja proposes to expand its existing natural gas transmission pipeline system between Ehrenberg, Arizona and an interconnection at the international border between the United States and Mexico. The North Baja system is the U.S. portion of the international North Baja/Gasoducto Bajanorte Pipeline Project. North Baja's existing system extends approximately 79.8 miles from an interconnection with the facilities of El Paso Natural Gas Company (El Paso)

near Ehrenberg through southeast California to a point on the international border between Yuma, Arizona and Mexicali, North Baja Mexico, where the pipeline interconnects with the Gasoducto Bajanorte pipeline. The North Baja/Gasoducto Bajanorte Pipeline Project was built in 2002 to supply domestic natural gas from the United States primarily to gasfired electric generation facilities in Baja California, Mexico. Since that time, several projects have been initiated to build liquefied natural gas (LNG) storage and vaporization terminals on the Baja California coast, near the terminus of the Gasoducto Bajanorte pipeline. This new source of natural gas would be stored in tanks as LNG at the terminals in Baja California, and then re-gasified (vaporized) and transported as natural gas into the North Baja/Gasoducto Bajanorte systems.

The existing North Baja system is currently certificated by the FERC to transport 512,500 dekatherms per day (Dthd) of natural gas in a southbound direction. Once completed, the expanded system would be capable of transporting up to 2,932,000 Dthd (2,753 million standard cubic feet per day) of natural gas from the planned LNG terminals in a northbound direction for delivery to customers in California and Arizona. In addition to the new volumes from the LNG terminals, North Baja would continue to offer southbound gas transportation service for several existing shippers. The anticipated delivery points for the proposed Project are: the IID's existing El Centro Generating Station in El Centro, California and the SoCal Gas Company (SoCal Gas) system in Blythe, California; and the El Paso system in Ehrenberg, Arizona.

The proposed North Baja Pipeline Expansion Project would involve the construction and operation of a pipeline loop; two pipeline laterals; two meter stations; modifications at North Baja's existing compressor and meter stations; and installation of taps and crossover piping, mainline and lateral valves, and pig launchers and receivers. A loop is a segment of pipeline that is usually installed adjacent to an existing pipeline and connected to it at both ends. The loop allows more gas to be moved through the system. A lateral pipeline typically takes gas from the main system to deliver it to a customer, local distribution system, or another interstate transmission system. A pig is an internal tool that can be used to clean and dry a pipeline and/or to inspect it for damage or corrosion.

Specifically, North Baja proposes to construct and operate:

- 79.8 miles of pipeline loop (B-Line) consisting of 11.7 miles of 42-inch-diameter pipeline extending from the existing Ehrenberg Compressor Station at milepost (MP) 0.0 in La Paz County, Arizona to the existing Rannells Trap at MP 11.7 in Riverside County, California and 68.1 miles of 48-inch-diameter pipeline extending from Rannells Trap to an interconnection at the U.S.-Mexico border at MP 79.8 in Imperial County, California;
- 2.1 miles of 36-inch-diameter pipeline (Arrowhead Extension) extending from the proposed B-Line at MP 7.4 to SoCal Gas' existing Blythe Compressor Station in Riverside County; and

- 45.7 miles of 16-inch-diameter pipeline (IID Lateral) extending from MP 74.5 of the B-Line near the existing Ogilby Meter Station in Imperial County to the existing IID El Centro Generating Station in Imperial County;
- modifications at the existing Ehrenberg Compressor Station in La Paz County and the existing Ogilby Meter Station in Imperial County to allow northbound flow of natural gas;
- metering modifications inside the existing El Paso Meter Station at the Ehrenberg Compressor Station site to allow LNG-source gas to be delivered into the El Paso system;
- one meter station (Blythe-Arrowhead Meter Station) at SoCal Gas' existing Blythe Compressor Station in Riverside County to measure gas delivery from the North Baja system to SoCal Gas;
- one meter station (El Centro Meter Station) at the IID's existing El Centro Generating Station in Imperial County to measure gas delivery from the North Baja system to the IID;
- two taps and crossover piping where the Arrowhead Extension would connect with the existing A-Line and proposed B-Line in Riverside County;
- one tap where the IID Lateral would connect with the proposed B-Line in Imperial County;
- four pig launchers, one where the Arrowhead Extension would connect with the existing A-Line and proposed B-Line, one at Rannells Trap in Riverside County, one at the Ogilby Meter Station, and one where the IID Lateral would connect with the proposed B-Line;
- five pig receivers, one at the Ehrenberg Compressor Station, one at the end of the Arrowhead Extension at the Blythe-Arrowhead Meter Station, one at Rannells Trap, one at the Ogilby Meter Station, and one at the end of the IID Lateral at the IID El Centro Generating Station;
- nine remote manual valves with automatic shutdown capability on the B-Line, adjacent to the existing A-Line valve sites; and
- four remote manual valves with automatic shutdown capability on the IID Lateral.

The proposed Project would be constructed in three phases beginning in 2007 and ending in 2009. Phase I would involve modifications at the existing Ehrenberg Compressor Station and

Ogilby and El Paso Meter Stations and construction of the Arrowhead Extension; Blythe-Arrowhead Meter Station and pig receiver; and the pig launcher, taps, and crossover piping at the beginning of the Arrowhead Extension. Phase I-A would involve the construction of the IID Lateral and El Centro Meter Station, one of the horizontal directional drills (HDDs) of the All-American Canal, and the HDD of the Eastline Canal. Phase II would involve the construction of the B-Line adjacent to North Baja's existing A-Line between Blythe and the U.S.-Mexico border. Phase II would also include the HDD of the Colorado River and the second HDD of the All-American Canal.

## **Maintenance**

An electronic monitoring system would monitor the integrity of the pipeline system. A maintenance team would be on-call at the Ehrenberg Compressor Station 24 hours a day. Maintenance activities would include erosion control, observation from a truck of the state of the facilities and conditions in the right-of-way, and repair of facilities if required. Environmental protection programs such as desert tortoise awareness training would be implemented during operation of the proposed project.

Additional details of the project description can be found in the draft EIS/EIR.

## **Conservation Measures**

The following conservation measures were described in the draft EIS/EIR. This biological opinion is issued on the assumption that these conservation measures will be implemented.

### *General Minimization and Conservation Measures*

1. North Baja would use its environmental training program, successfully implemented for the A-Line construction, as a basis for a site-specific environmental training program to be implemented before the start of work. All employees and contractors working in the field would be required to complete an environmental training session before beginning work on the right-of-way. The program would include discussions of the biology, distribution, and ecology of special status species within the geographic area of construction; protection afforded such species under applicable Federal and State laws and regulations; all protection measures that must be followed to protect such species during Project activities; penalties for noncompliance; reporting requirements; and the importance of compliance with all protection measures. To ensure proper focus, emphasis would be placed on the specific aspects of compliance applicable to the particular audience's activities on the Project.
2. Employees and contractors would be informed during one or more training sessions that they are not authorized to handle or otherwise move listed species at any time, including while commuting to work sites or at a work site.

3. North Baja would hire and designate at least two Environmental Inspectors (EIs) per construction spread who would be responsible for overseeing Project environmental protection measures, including those for special status species. Environmental inspection procedures would be in compliance with the relevant provisions of North Baja's Construction Mitigation and Restoration Plan. North Baja would also hire and designate at least one authorized biologist who would be responsible for identification of habitat and individuals of special status species and for implementation of all measures requiring an authorized biologist's intervention. The biologist would, if needed, hold the required permits or formal agreements with appropriate Federal and State agencies for the survey or handling of any special status species.
4. An authorized biologist would conduct species-specific surveys of each Project facility located within areas identified during North Baja's surveys as listed species habitat no more than 7 days before the onset of activities.
5. Project personnel would exercise caution when commuting to the construction area to minimize any chance for the inadvertent injury or mortality of species encountered on roads leading to and from the construction area. North Baja's contractors and employees would report all such incidents directly to an EI.
6. Only existing routes of travel and approved access roads would be used to and from construction areas. Cross-country travel by vehicles and equipment would be prohibited. Except on county- or State-maintained roads, vehicle and equipment speeds would not exceed 25 miles per hour within potential habitat of a listed species. On the B-Line, between MPs 48.0 and 68.0 (an area of relatively high tortoise density), North Baja states that it would limit vehicle and equipment speeds to 10 miles per hour except for stringing trucks, which North Baja proposes to allow to travel at 25 miles per hour. In accordance with the recommendation of the environmental staffs of the FERC, the California State Lands Commission (CSLC), and the Bureau of Land Management (BLM) in Section 4.7.3 of the EIS/EIR, North Baja would be required to restrict stringing trucks to a 10-mile-per-hour speed limit between MPs 48.0 and 68.0 on the B-Line.
7. Authorized biologists would monitor all work where prior North Baja surveys have documented the occurrence of one or more listed species and where construction activities can reasonably be expected to adversely affect those species. In conjunction with North Baja's EIs, the biologists would have the authority to halt all non-emergency actions that might result in harm to a listed species, and would assist in the overall implementation of protection measures for listed species during Project activities.
8. All trash and food items generated by construction and maintenance activities would be promptly placed in a closed container and regularly removed from the Project site to reduce the attractiveness of the area to common ravens and other desert predators.

9. Firearms and domestic pets would be prohibited from work sites.
10. In the construction work area and along access roads, employees and contractors would look under vehicles and equipment for the presence of special status species before movement. If a special status species is observed, no vehicles or equipment would be moved until the animal has left voluntarily or is removed by an authorized biologist.
11. Pipeline construction activities between dusk and dawn would be limited to emergencies only (i.e., issues involving human health and safety) with the exception of the HDD operations (including those at the Colorado River, the All-American Canal, Interstate 8, the East Highline Canal) and the open-cut crossing of Rannells Drain.
12. Open pipeline trenches, auger holes, or other excavations that could entrap wildlife would be inspected by an authorized biologist a minimum of three times per day, and immediately before backfilling. In habitats supporting special status species, pipe segments would either be capped or taped closed each night or raised on supports of sufficient height to prevent the entry and entrapment of special status species. Such pipe segments would be inspected regularly before sealing and before using in the morning. For open trenches, earthen escape ramps would be maintained at 1-mile intervals. Other excavations that remain open overnight would be covered, ramped, or fenced to prevent entrapment of wildlife.
13. If a listed species is located during construction, and a contingency for avoidance, removal, or transplant has not been approved by the U.S. Fish and Wildlife Service (FWS or Service) or appropriate agency, North Baja would not proceed with Project activities in that location until specific consultation with the FERC, the FWS, the BLM, and/or other appropriate agency is completed.
14. All encounters with listed species would be reported to the biologist, who would record the following information:
  - a. species;
  - b. location (narrative and maps) and dates of observations;
  - c. general condition and health, including injuries and state of healing;
  - d. diagnostic markings, including identification numbers or markers; and
  - e. locations moved from and to.
15. Upon locating a dead or injured listed species, North Baja would notify the FWS and the California Department of Fish and Game (CDFG) in California or the Arizona Game and Fish Department in Arizona. Written notification would be made within 15 days of the date and time of the finding or incident (if known) and would include: location of the carcass, a photograph, cause of death (if known), and other pertinent information.



16. As described in Section 2.2.1 of the EIS/EIR, in general, the construction right-of-way would be limited to a width of 105 feet along the B-Line. North Baja proposes to generally use a 100-foot-wide construction right-of-way for the Arrowhead Extension except when in the Arrowhead Boulevard roadway or road shoulder where a 60-foot-wide construction right-of-way would be used. The construction right-of-way for the IID Lateral would be limited to a width of 60 feet for the majority of its length and 80 feet where it parallels existing utility corridors. The construction right-of-way would be clearly staked and flagged in advance of construction. The construction work area includes approved work areas for the pipelines, compressor station, and meter stations; the facilities at Rannells Trap; the taps, crossover piping, and pig launcher associated with the Arrowhead Extension; access roads; the tap to the B-line and pig launcher associated with the IID Lateral; and staging and pipe storage areas.
17. As described in Section 4.6.2.3 of the EIS/EIR, North Baja would attempt to schedule construction in native habitats outside of the breeding season for migratory birds. If, however, construction activities are necessary in native habitats during the bird breeding season, North Baja would remove vegetation that could provide nesting substrate from the right-of-way before the breeding season, thus eliminating the possibility that birds could nest on the right-of-way. In accordance with the recommendation of the environmental staffs of the FERC, the CSLC, and the BLM in Section 4.6.2.3 of the EIS/EIR, specific plans relating to preclearing of vegetation would be coordinated with the FWS, the BLM, and the CDFG. Qualified biologists would conduct preconstruction surveys to confirm the absence of nesting birds before construction begins.
18. If, in spite of vegetation removal, nesting birds are found on the construction right-of-way, the nest would not be removed until fledging has occurred or unless authorized after consultation with the FWS, the CDFG, and, if the nest is located on Federal lands, the Federal land management agency.
19. At specified locations in areas of high-density microphyll woodland (see Table 4.5.3-2 of the EIS/EIR), North Baja would narrow the construction right-of-way width to 80 feet. Areas of this narrower construction width would be identified in the field, staked, and flagged in advance of construction.
20. At the conclusion of work, all trenches and holes would be completely filled, surfaces cleaned and smoothed, and each site recontoured to match the original profiles as closely as possible.
21. With the exception of fenced facilities, all materials and equipment would be removed from the area upon completion of work. All stakes, flagging, and fencing used to delineate and protect any environmental or cultural feature in the construction area would be removed no later than 30 days after construction and restoration are complete.

22. Upon completion of Project activities, North Baja would submit a final report to the FERC for distribution to other agencies, including the FWS. The report would document the effectiveness and practicality of the conservation measures, the number of individuals of each species excavated from their burrows or removed from the site, the number of individuals killed or injured, and other pertinent information. The report would also recommend modifications of the Project stipulations in order to enhance the protection of species in the future. In addition, the final report would provide the actual acreage disturbed by Project activities by habitat type.
23. North Baja would also monitor the entire pipeline route to determine the success of restoration of desert vegetation. In native desert habitats, restoration would be considered successful if the right-of-way is similar in species composition to adjacent undisturbed lands. This post-construction monitoring would be conducted annually in areas of desert vegetation disturbed by construction through 2012. Results of the monitoring would be provided in reports to the FERC, the BLM, the CSLC, and the CDFG.
24. Additionally, North Baja would conduct surveys for non-native invasive plant species. The results would be compared to the preconstruction survey conducted to determine locations of weed infestations attributable to the Project. North Baja would be responsible for weed survey and control two times a year for 2 years, then once a year thereafter as part of its routine operation and maintenance of the pipelines.
25. After construction, the lead, cooperating, and/or other agencies would continue to conduct oversight inspection and monitoring. If it is determined that any of the proposed monitoring time frames are not adequate to assess the success of restoration, North Baja would be required to extend its post-construction monitoring programs. The BLM would retain North Baja's bond or other security until the BLM is satisfied with North Baja's reclamation efforts.

#### *Desert Tortoise Conservation Measures*

26. Compensation rates for new impacts on desert tortoise habitat of 1:1 would be calculated and an assessed financial contribution would be paid to the BLM. In accordance with accepted guidelines previously implemented by the FERC, the FWS, and the BLM, areas of new impacts would include only those areas not previously affected by construction of the A-Line.
27. North Baja would provide funding to the CDFG to manage acquired lands in addition to an enhancement fee based on the same compensation rate, which would be based on the CDFG published or calculated rates per acre at the time of issuance of the final EIS/EIR for the proposed Project.

28. North Baja would submit the names, permit numbers, and relevant tortoise experience resumes of all individuals who might need to handle desert tortoises to the FWS for approval at least 15 days before the initiation of clearance surveys. North Baja would also submit the list to the BLM for its records. Project activities would not begin until an authorized biologist has been approved. Although other biologists may be employed as biological monitors, only those approved by the FWS as authorized biologists would be permitted to handle tortoises.
29. All persons authorized by the FWS to handle desert tortoises would follow the guidelines established in the Guidelines for Handling Desert Tortoises During Construction Projects (Desert Tortoise Council 1999).
30. A clearance survey for the desert tortoise would be conducted by an authorized biologist within 24 hours before ground disturbance.
31. Burrows outside of the limits of the construction right-of-way would be flagged so that the biological monitor would be able to more easily locate them during construction.
32. All desert tortoise burrows or pallets in the construction area would be excavated by an authorized biologist. All desert tortoise handling and burrow excavation would be in accordance with the handling procedures developed by the FWS and would be conducted by authorized biologists.
33. Desert tortoises that are found above ground and need to be moved from potential harm would be placed in the shade of a shrub by the authorized biologist. All desert tortoises removed from burrows would be placed in an unoccupied burrow of approximately the same size as the one from which it was removed.
34. If an existing burrow is unavailable, the authorized biologist would construct or direct the construction of a burrow of similar size, shape, depth, and orientation as the original burrow. Desert tortoises moved during inactive periods would be monitored for at least 2 days after placement in the new burrows to ensure their safety. The authorized biologist would be allowed some judgment and discretion to ensure that the survival of the desert tortoise is likely.
35. Should a tortoise wander into the construction area during construction, adjacent activities would be halted until the tortoise is moved out of the construction work area and out of harm's way.
36. North Baja would install exclusion fencing along the right-of-way in areas where tortoise density is sufficiently high to warrant fencing, in the opinion of the authorized biologist in charge of tortoise surveys and in consultation with the FWS and the CDFG, to prevent tortoises from entering the construction work area and getting in harm's way.

37. A worker bonus program would be implemented that would reward construction staff who spot a tortoise within the construction work area and, without touching or disturbing the animal, notify the authorized biologist for action.
38. If a tortoise is located in the construction work area and is not moving, adjacent activities would be halted until an authorized biologist is able to move it out of harm's way.
39. All pipeline marker signs within desert tortoise habitat would be fitted with "bird-be-gone" or similar bird repellent devices.
40. Only approved access roads would be used. Only approved areas would be used for temporary storage areas, laydown sites, and any other surface-disturbing activities. Any routes of travel that require construction or modification, or any additional work areas, would be surveyed for tortoises by an authorized biologist(s) before modification or construction of the route or construction or use of a new work area.
41. Trench segments or other excavations would be provided with tortoise escape ramps at 1-mile intervals. All excavations would be inspected for tortoises three times daily and before backfilling.
42. Any time a vehicle is parked, the ground around and under the vehicle would be inspected for desert tortoises before the vehicle is moved. If a desert tortoise is observed, it would be left to move on its own. If this does not occur within 15 minutes, an authorized biologist would remove and relocate the tortoise.
43. Within desert tortoise habitat, construction pipe, culverts, or similar structures with a diameter of 3 inches or greater that are stored on the construction site for one or more nights would be inspected for tortoises before the material is moved, buried, or capped. As an alternative, all such structures may be capped before being stored on the construction site.
44. All construction-related activities in desert tortoise habitat would be conducted between dawn and dusk.

*Peirson's Milk-vetch Conservation Measures*

45. All topsoil within 2 to 8 inches of the soil surface would be set aside during construction and respread above the pipeline when construction is complete.
46. The right-of-way of the B-line would be imprinted (sheepsfooted) to create microcatchments for seeds and moisture. The right-of-way for the IID Lateral would not be imprinted in the sand dunes because it would be ineffective.

47. Construction in Peirson's milk-vetch habitat is expected to occur between mid-June and mid-September, usually the time of year of the fewest standing plants.

## STATUS OF THE SPECIES/CRITICAL HABITAT

### Desert Tortoise (*Gopherus agassizi*)

The Mojave population of the desert tortoise was emergency listed as endangered by the Service on August 4, 1989 (54 FR 32326). On April 2, 1990, the Service issued a final rule listing the desert tortoise as threatened (55 FR 12178). The Mojave population is defined as occurring north and west of the Colorado River in California (Mojave and Sonoran deserts), southern Nevada, north-western Arizona, and south-western Utah. Reasons for the threatened status included loss and degradation of habitat from construction projects, conversion of tortoise habitat for agricultural development, livestock grazing, and off-highway vehicle (OHV) activity. Also cited as factors for individual mortality and population declines were illegal collection, upper respiratory tract disease, and elevated levels of predation. The desert tortoise is also listed as threatened under the California Endangered Species Act.

In June 1994, a Final Recovery Plan was issued for the Mojave population of the desert tortoise. The Desert Tortoise Recovery Plan serves as the key strategy for recovery and delisting of the desert tortoise. The document divides the species' range into six distinct population segments or recovery units (i.e., Northern Colorado, Eastern Colorado, Eastern Mojave, North-eastern Mojave, Western Mojave, and Upper Virgin River) and recommends the establishment of 14 Desert Wildlife Management Areas (DWMAs) throughout the recovery areas. Within each designated region, the recovery plan recommends reserve level protection for both desert tortoise populations and habitat, while maintaining and conserving sensitive species and ecosystem functions. The design of the DWMAs follow accepted concepts of reserve design and, as part of the actions, restrict human activities that negatively affect the desert tortoise (Service 1994).

### Critical Habitat

On February 8, 1994, the Service designated approximately 6.47 million acres of critical habitat for the Mojave population of the desert tortoise (California - 8 units, 4.8 million acres; Nevada - 4 units, 1.2 million acres; Arizona - 2 units, 338,700 acres; Utah - 2 units, 129,100 acres [59 FR 5820]). The rule became effective on March 10, 1994. The Service determined critical habitat unit boundaries based on proposed DWMAs in the Draft Recovery Plan for the Desert Tortoise (Mojave Population). A total of twelve critical habitat units were designated across California, Nevada, Utah, and Arizona. Three units span more than one state: Piute-Eldorado occurs in California and Nevada; Gold Butte-Pakoon occurs in Nevada and Arizona; and Beaver Dam Slope occurs in Nevada, Arizona, and Utah.

Critical habitat is designated by the Service to identify the key biological and physical needs of the species and key areas for recovery, and focuses conservation actions on those areas. Critical habitat is composed of specific geographic areas that contain the biological and physical attributes that are essential to the species' conservation within those areas, such as space, food, water, nutrition, cover, shelter, reproductive sites, and special habitats. These features are called the primary constituent elements of critical habitat. The specific primary constituent elements of desert tortoise critical habitat are: sufficient space to support viable populations within each of the six recovery units and to provide for movement, dispersal, and gene flow; sufficient quality and quantity of forage species and the proper soil conditions to provide for the growth of these species; suitable substrates for burrowing, nesting, and overwintering; burrows, caliche caves, and other shelter sites; sufficient vegetation for shelter from temperature extremes and predators; and habitat protected from disturbance and human caused mortality.

The final rule for designation of critical habitat did not explicitly ascribe specific conservation roles or functions to the various critical habitat units. Rather, it refers to the strategy of establishing recovery units and desert wildlife management areas recommended by the recovery plan for the desert tortoise, which had been published as a draft at the time of the designation of critical habitat, to capture the "biotic and abiotic variability found in desert tortoise habitat" (59 FR 5820, see page 5823). Specifically, we designated the critical habitat units to follow the direction provided by the draft recovery plan for the establishment of desert wildlife management areas. Note that each critical habitat unit functions independently of the others in terms of providing the physical and biological needs of individual desert tortoises; that is, desert tortoises are not required to move between or among units to complete their life histories. For this reason, we have not presented specific information related to the status of individual critical habitat units that are located outside of the action area. We also note that the critical habitat units in aggregate are intended to protect the variability that occurs across the large range of the desert tortoise; the loss of any specific unit would eliminate elements of the species' behavioral, ecological, and genetic variability.

### ***Chuckwalla Critical Habitat Unit***

Approximately 107,183 acres of this critical habitat unit lie within Joshua Tree National Park (Service 2005a). We were unable to obtain any information on specific uses of this area from the National Park Service; however, given the general patterns of visitor use at Joshua Tree National Park, we expect that this area receives little use.

Approximately 187,046 acres of this critical habitat unit lie within the Chocolate Mountains Aerial Gunnery Range (Pearce pers. comm. 2005). Within the area designated as critical habitat of the desert tortoise, the Marine Corps primarily uses the Chocolate Mountains Aerial Gunnery Range to support target sites for aircraft and, to a lesser degree, ground-based artillery; maintenance of the targets is the other primary activity in this area. Target areas cover approximately 2,095.5 acres and forward arming and refueling points occupy 161 acres. Approximately 202.8 miles of roads cross this portion of the critical habitat unit. Forward

arming and refueling points are areas that the Marine Corps uses to land helicopters to refuel and rearm them in the field. Refueling can be done from a large transport helicopter to a smaller attack helicopter, but it is usually done from pre-positioned trucks. The trucks stay on designated routes to minimize surface disturbance and dust in the landing zone. Except to place targets in the designated targets areas, which are both mapped and marked with permanent monuments on the ground, vehicles are required to stay on the designated roads. Washes are only used when they are part of the designated routes. The Marine Corps and Service consulted, pursuant to section 7(a)(2) of the Act, on the effects on the desert tortoise and its critical habitat of the roads, target areas, and forward arming and refueling points in 1996 (Pearce pers. comm. 2005).

### Life History

The desert tortoise is a large herbivorous reptile found in portions of the California, Arizona, Nevada, and Utah deserts, and extending in range to Sonora and Sinaloa, Mexico. In California, the species occurs primarily within the creosote bush, shadscale, and Joshua tree series of the Mojave Desert scrub, and the lower Colorado River Valley subdivision of the Sonoran Desert scrub. Optimal habitat has been characterized as creosote bush scrub in which precipitation ranges from 2 to 8 inches, the diversity of perennial plants is relatively high, and production of ephemerals is prominent (Luckenbach 1982, Turner 1982, Turner and Brown 1982, Schamberger and Turner 1986). Soils must be friable to allow for burrow excavation, but firm to avoid burrow collapse. In California, desert tortoises are typically associated with gravel flats or sandy soils with some clay, although the species has occasionally been found on windblown sand or rocky terrain (Luckenbach 1982).

Desert tortoises are found in a variety of desert habitats, including arid, sandy, or gravelly areas in creosote bush scrub. They retreat into their horizontal burrows to avoid high daytime temperatures. Desert tortoises are most active in California during the spring and early summer when annual food plants are most prevalent. Additional activity occurs during the warmer fall months and sometimes following summer rain storms. Desert tortoises spend the remainder of the year in burrows, escaping the extreme conditions of the desert. Further information on the range, biology, and ecology of the desert tortoise is described in Burge and Bradley (1976), Burge, (1978), Luckenbach (1982), Weinstein et al. (1987), Hovik and Hardenbrook (1989), Service (1994), and Tracy et al. (2004).

### Population Dynamics

Desert tortoises do not reach sexual maturity until they are 10 to 15 years old. Tortoise populations are probably dependent on relatively rare years of sufficient and timely precipitation to produce sufficient forage for reproduction and survival. This life history makes the species susceptible to environmental perturbations that may affect recruitment of young animals into the population, or survival of breeding adults before replacement (55 FR 12179).

### Status and Distribution

Analysis of study plot data from sites in the western Mojave Desert indicate that subpopulations (both adults and especially juveniles) have declined over the last decade. The desert tortoise species is long-lived with a relatively slow rate of reproduction. Vandalism, collecting, raven predation, drought, and disease are a few of the many factors that are implicated in population declines. Habitat conditions have deteriorated and/or habitat has been lost in certain localities resulting from urban, energy, and mineral development; conversion of native habitats to agriculture; vehicle-oriented recreation; livestock grazing; military activities; and other uses (55 FR 12179). Luckenbach (1982) concluded that human activity is the most significant cause of tortoise mortality. Also, the apparent distribution of Upper Respiratory Disease Syndrome, not identified before 1987 in wild tortoises, has suggested the possibility of an epizootic condition and thus may be a significant contributing factor to the current high level of desert tortoise losses documented from certain localities (55 FR 12179).

### Threats

Numerous factors are likely involved in the decline of desert tortoise populations. Predation by common ravens and domestic and feral dogs, unauthorized OHV activity, authorized vehicular activity, illegal collecting, upper respiratory tract disease, possibly other diseases, mortality on paved roads, vandalism, drought, livestock grazing, feral burros, human development, non-native plants, changes to natural fire regimes, and environmental contaminants are known or potential contributing factors. Tracy et al. (2004) postulate that “disease alone is not sufficient to explain (desert) tortoise die-offs.” They state that a combination of factors may be responsible for declines in the numbers of desert tortoises across its range and cite a “growing awareness” among experts on disease “that the probability of infection leading to death in (desert) tortoises may be a function of chronic stress (e.g., malnutrition) and the strain of infectious agent. This means that the presence of disease alone is not sufficient to explain (desert) tortoise die-offs. For example, it is possible that habitat degradation results in physiologically stressed (desert) tortoises that then succumb to disease agents that are normal at background levels in healthy populations.” Oftedal (2005) has advanced the concept that desert tortoises “must match their ability to balance nutrient intake and excretion over a period of years to ephemeral plant resources that change over period of weeks.” Basically, Oftedal contends that desert tortoises are completely dependent on nutrient resources that are only available briefly and on an irregular basis to sustain them over years when these resources are scarce or absent; furthermore, the ephemeral plants that they need to ingest at these times are high in protein and water relative to potassium. In areas where non-native plant species that do not contain these specific nutrients, such as Mediterranean grass and brome grass, have displaced the plants that desert tortoises require, they may be in a state of chronic nutritional stress. This level of stress may be an important component in the declines that have been observed over large portions of the California desert. Finally, Federal, State, and local agencies and non-governmental organizations have undertaken numerous activities to attempt to recover the desert tortoise in California. Agencies and others have modified grazing procedures, retired livestock allotments,



fenced highways, removed burros, and restored disturbed habitat, among other activities in an attempt to recover the desert tortoise. The extent that these efforts will benefit the desert tortoise will be difficult to measure because of the slow reproductive rate of the species and other factors, such as disease, drought, and predation, that may be affecting the number of individuals in a region.

Increases in non-native plant presence and vegetative biomass may increase the propensity for habitat to burn. Desert tortoises and their habitat are not adapted for regular fires as some ecosystems are and wildfire may kill tortoises directly or affect the microhabitats available to them. In 2005, 136,447 acres of desert tortoise critical habitat (2.1 percent of total) burned.

### Synopsis of Status

Available data suggest many or most desert tortoise populations are in long-term decline for reasons that are unclear. We make this statement despite acknowledging the difficulties involved in estimating the numbers of a species that spends a large portion of its life underground and that occurs over millions of acres. Although some statistical tests do not indicate obvious declines, other studies and observations clearly indicate that desert tortoise populations are not functioning normally. For example, the transects in the Western Mojave Recovery Unit that did not detect any sign over large areas of previously occupied habitat and the numerous carcasses found on permanent study plots and lack of recent sign also suggest population decline. During line distance sampling conducted in 8 desert wildlife management areas in California in 2003, 930 carcasses and 438 live desert tortoises were detected; more carcasses than live animals were detected in every study area (Woodman 2004). In 2004, workers conducting line distance sampling in California detected 1,796 carcasses and 534 live desert tortoises; once again, more carcasses than live animals were detected in every study area (Woodman 2005). Line distance sampling in the Chuckwalla DWMA shows a statistically significant decline in density from 11.61 tortoises per square kilometer in 2001 to 5.47 tortoises per square kilometer in 2004 (Averill-Murray et al. 2006).

### Peirson's Milk-vetch (*Astragalus magdalenae* var. *peirsonii*)

Peirson's milk-vetch was listed as an endangered species by the State of California in 1979. On May 8, 1992, the Service published a rule proposing endangered or threatened status for seven desert milk-vetch taxa, including Peirson's milk-vetch (57 Federal Register 19844). The Service listed this species as threatened on October 6, 1998 (63 FR 53596) due to threats of increasing habitat loss from OHV use and associated recreational development, destruction of plants, and lack of protection afforded the plant under State law. At the time of listing, the Service estimated that 75-80% of the milk-vetch habitat in the Algodones Dunes was subject to OHV use.

Peirson's milk-vetch is a stout, short-lived perennial member of the Legume Family (Fabaceae). Stems are gray-green in color, upright, and reach heights of 20 to 70 centimeters (8 to 27 in).

Leaves are pubescent, gray-green, long, and slender, with paired leaflets along each edge. The flowers are dull purple, arranged in 10- to 17-flowered racemes. The pods are large and inflated, 2 to 3.5 centimeters (0.8 to 1.4 in) long, and contain 4.5 to 5.5-mm (0.2-in) black flat seeds; the largest seeds of any *Astragalus* in North America (Barneby 1964). Seeds require no pre-germination treatment to induce germination but show increased germination success when scarified (Romsper and Burk 1979). Seeds germinated best at lower and intermediate temperatures (15 to 25°C) in laboratory studies (Romsper and Burk 1979), and as might be expected, germinate in the cooler fall and winter months. The taproot is extremely long and penetrates deeply before lateral rootlets emerge (Barneby 1964). The root crown is often exposed due to moving sand in the dunes. Milk-vetch seedlings mature rapidly, and although perennial, some plants may bear fruit within several months of germination (Barneby 1964, Phillips et al. 2001). Romsper and Burk (1979) noted that older plants were the primary seed producers, and plants that become reproductive in the first season do not contribute much to the seed pool. This corresponds to conclusions reached by Pavlik and Barbour (1986) on a related *Astragalus* species, although Phillips and Kennedy (2002) concluded that there was a “substantial infusion of seeds into the sand as a result of the 2000 germination event and favorable weather conditions in the dune system in the spring and summer 2001.” Survival into the following wet fall/winter period was low in studies conducted by Romsper and Burk (1979), and Phillips and Kennedy (2002) reported 26 percent survival of the 2000-01 cohort through the summer of 2001. Though additional research will improve our understanding of the relative importance of first year reproductive plants, the existing literature suggests that older plants are important contributors to the persistence of the Peirson’s milk-vetch seedbank. Romsper and Burk (1979) also noted significant presence of the bruchid seed beetles, which they concluded contributes to a high mortality of seeds and a reduced seed crop for the species.

Peirson’s milk-vetch grows on slopes and hollows of windblown dunes in the southwestern Sonoran Desert. The species is frequently associated with other psammophytic (sand-loving) plants in the psammophytic scrub plant community. The only confirmed extant population of Peirson’s milk-vetch in the U.S. is distributed in what can be considered one extensive population of scattered colonies spanning the length of the (Algodones) dune system (63 FR 53596). The plant occurs primarily in partially stabilized bowls that lie behind the primary, western-most dunes. Most vegetation occurs in dunes of intermediate size in the western half of the area, and not in the high dunes in the eastern portion of the dune field (Phillips and Kennedy 2002). Approximately 108,658 acres of psammophytic scrub/active dune occurs within the Imperial Sand Dunes Recreation Area (ISDRA) (BLM 2002), although recent studies conclude that mappable concentrations of plants were noted in less than 25 percent of the dunes proper (Phillips and Kennedy 2002). Service analysis of 2005 survey data concluded that 21 percent of the dunes was occupied (Service in litt. 2006). Surveys conducted in the Borrego Valley, where the species was originally collected, have failed to detect Peirson’s milk-vetch (BLM 2001). Another historic location, west of the Salton Sea, cannot be confirmed. Peirson’s milk-vetch has been apparently misidentified in the Yuma Dunes of Arizona (Phillips and Kennedy 2002). A specimen collected in the Gran Desierto of northwestern Sonora was confirmed as *A. m.* var. *peirsonii* by A. Phillips in 2001.

Peirson's milk-vetch exhibits temporal variability in plant numbers apparently associated with annual precipitation patterns. In dune-wide surveys conducted during the spring of each year from 1997 to 2006, the species was most abundant in 2005, after the highest rainfall year, and least abundant in 2000 and 2006, after the lowest rainfall years. Responses of this species were similar in both the closed and open areas across 4 years of BLM monitoring (BLM 2001). Based on current understanding of the species' life history, sufficient rain in conjunction with wetter than average fall weather appears to trigger significant germination events. After germination, seedlings may be present throughout the dunes, especially during above normal precipitation years. As discussed above, older plants produce more seeds than first-year plants. In intervening drier years, plant numbers decrease as individuals die and are not replaced by new seedlings. The species likely depends on the production of seeds in the wetter years, and the persistence of seed producers and seeds in the seed bank until appropriate conditions for germination and reproduction occur. Further research and modeling are necessary to better understand the dynamics of this system and how the species may be responding to natural and man-made disturbances within its range.

Vehicles can crush individual plants, reduce the reproductive output of those that survive, and change dune structure. Destruction of plants and modification of habitat associated with OHV activity is considered the primary threat to Peirson's milk-vetch. Willoughby (2001), however, concluded that healthy milk-vetch populations persist in OHV "open areas" in the Algodones Dunes and that populations in both "open" and "closed" areas respond to precipitation patterns. This likely results from the observation that OHV use does not tend to encroach on habitat of the plants in more distant regions of the open area away from OHV staging concentrations (Willoughby 2001). At the time of listing, an estimated 75 percent of the ISDRA was open to motorized vehicle use. Since listing, recreational use and border traffic associated with illegal entry into the U.S. has increased significantly in the Algodones Dunes. The number of visits to the ISDRA has tripled since 1985 (BLM 2002).

The Service has not yet developed a recovery plan for Peirson's milk-vetch. Based on our current understanding of the species' biology, the primary conservation needs include: maintenance of the major occurrences of Peirson's milk-vetch to conserve genetic diversity; management of milk-vetch habitat to prevent catastrophic population declines; and collection of additional information concerning recreational use-patterns in the Algodones Dunes, the direct and indirect effects of OHV use on this species, and biological factors affecting milk-vetch demographics.

### Critical Habitat

On August 5, 2003, the Service proposed to designate approximately 52,780 acres (ac) (21,359 hectares (ha)) of critical habitat for Peirson's milk-vetch (68 FR 46143). On August 4, 2004, the Service designated approximately 21,836 acres (ac) (8,848 hectares (ha)) as critical habitat (69 FR 47330).

The proposed critical habitat is designed to provide sufficient habitat to maintain self-sustaining populations of *A. m. var. peirsonii* throughout its range and to provide those habitat components essential for the conservation of the species. These habitat components provide for: (1) individual and population growth, including sites for germination, pollination, reproduction, pollen and seed dispersal, and seed bank; (2) intervening areas that allow gene flow and provide connectivity or linkage within segments of the larger population; and (3) areas that provide basic requirements for growth, such as water, light, and minerals.

The primary constituent element of critical habitat for *A. m. var. peirsonii* consists of intact, active sand dune systems (defined as sand areas that are subject to sand-moving winds that result in natural expanses of slopes and swales) within the historical range of *A. m. var. peirsonii* that are characterized by: (A) substrates of the Rositas soil series, specifically Rositas fine sands of sufficient depth to promote *A. m. var. peirsonii* and discourage creosote bush scrub; and (B) wind-formed slopes of less than 30 degrees, but generally less than 20 degrees.

## ENVIRONMENTAL BASELINE

Regulations implementing the Act (50 CFR §402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area. Also included in the environmental baseline are the anticipated impacts of all proposed Federal projects in the action area that have undergone section 7 consultation, and the impacts of State and private actions which are contemporaneous with the consultation in progress.

This biological opinion does not rely on the regulatory definition of “destruction or adverse modification” of critical habitat at 50 CFR 402.02. Instead, we have relied upon the statute and the August 6, 2004, Ninth Circuit Court of Appeals decision in *Gifford Pinchot Task force v. U.S. Fish and Wildlife Service* (No. 03-35279) to complete the following analysis with respect to critical habitat.

The proposed project is entirely within the Lower Colorado River Valley subdivision of the Sonoran Desert. Vegetation communities in the action area include creosote bush scrub, desert wash woodland, desert sand dune, agricultural, and urban/ruderal. The proposed project would also cross approximately 2.7 miles of wetlands, some near the Colorado River and some near canals in the Imperial Valley.

The desert has been affected by a myriad of incremental impacts from anthropogenic sources. Habitat loss, roads, air and water pollution, recreational activities, and other activities occurring in the action area decrease the capacity for the habitat to support threatened and endangered species or directly decrease numbers of threatened and endangered species. Climate change is expected to change future habitat conditions, with potentially harmful results for threatened and endangered species.

The first North Baja Pipeline (A-line) was constructed in 2002 adjacent to the B-line of the proposed project and thus has a large effect on the environmental baseline. Approximately 30 feet are between the A-line and proposed B-line. Reseeding of the A-line was generally unsuccessful, but an above-normal precipitation year in 2004-2005 aided restoration greatly. Small palo verde (*Cercidium floridum*) and ironwood (*Olneya tesota*) have grown in some areas. Vertical mulch appears to have succeeded in discouraging OHV traffic on the alignment, except near the international border where Border Patrol has been using the alignment. The alignment is still clearly visible however and complete restoration is not expected for many years.

Four weed species were found in preconstruction surveys for the A-line: African mustard (*Brassica tournefortii*), Australian saltbush (*Atriplex semibaccata*), fountain grass (*Pennisetum* sp.), and tamarisk (*Tamarix ramosissima*). Post-construction surveys found mustard and tamarisk in areas they had previously inhabited, but they had not spread to new areas. Fountain grass had been eliminated.

The environmental baseline for each species is described in more detail below:

#### *Desert Tortoise*

The proposed project is in the Eastern Colorado Recovery Unit as defined in the Recovery Plan (Service 1994). This Recovery Unit has one DWMA, the Chuckwalla DWMA. The desert tortoise population in the Chuckwalla DWMA is generally declining. In one long-term study plot, the density of tortoises has declined from approximately 150 per square mile to 50 per square mile from approximately 1979 to 1997 (Tracy et al. 2004). In another long-term study plot, the density has remained stable at approximately 50 per square mile (Tracy et al. 2004). However, the overall density as measured by line distance sampling has declined from 10.80 per square kilometer in 2001 to 6.38 per square kilometer in 2005 (Service 2006).

Approximately 62 miles of the proposed B-line is in desert tortoise habitat. Desert tortoise habitat is not present on the IID Lateral. Desert tortoise habitat occurs between approximately MP 11 of the proposed B-line outside of Blythe to approximately MP 76 at Interstate 8. Habitat in this area is creosote bush scrub or desert wash woodland. Desert tortoise information for the project comes from three sources: 2001 surveys for the A-line, 2002 construction encounters, and a 2005 survey for the B-line.

Occasional tortoise sign was found between Blythe and Milpitas Wash (approximately MPs 11 to 39). An increased concentration of sign and live tortoises was found from Milpitas Wash to Tumco Wash (approximately MPs 39 to 67). From Tumco Wash to Interstate 8 occasional sign was found (approximately MPs 67 to 76).

Thirteen tortoises were found during surveys in 2005, two of which were on the right-of-way. One hundred four burrows, 10 carcasses, and 21 scat were also found during surveys.

One tortoise was killed during construction operations on the A-line, 15 were relocated, and 13 were observed. Thus tortoise populations along the right-of-way were likely not substantially affected by construction of the A-line.

Highway 78 parallels a portion of the alignment and likely affects the desert tortoise populations nearby, primarily from mortality of tortoises on the road. Tortoise sign was found in reduced numbers up to 0.4 kilometer from a highway in one study (Boarman and Sazaki 1994). The alignment also parallels two roads that are less busy, Stallard Road and Ogilby Road.

#### *Peirson's Milk-vetch*

Peirson's milk-vetch is assumed to occur in the Algodones Dunes from approximately MPs 0.5 to 7.5 of the IID Lateral. This section would lie near Interstate Highway 8, passing through a designated OHV open area and a campground. Thus, the suitability of the habitat for milk-vetch is currently impaired by substantial impacts from recreation.

The B-line right-of-way was surveyed for Peirson's milk-vetch south of Interstate 8. Peirson's milk-vetch was reported as present. Photographs were submitted with the survey report in which inflated seed pods are clearly visible. The right-of-way on the B-line south of Interstate 8 is not in the sand dunes, though a sand veneer may be present; therefore, it is not typical habitat for Peirson's milk-vetch. We have determined that the milk-vetch observed on the B-line is very unlikely to be Peirson's milk-vetch. The photographs are inconclusive, but they appear to show full-sized leaflets. Peirson's milk-vetch has extremely reduced leaflets. These plants are likely Borrego milk-vetch (*Astragalus lentiginosus* var. *borreganus*), which also has inflated pods.

### EFFECTS OF THE ACTION

Proposed construction and maintenance of the North Baja Expansion Project will cause direct and indirect impacts on desert tortoise and Peirson's milk-vetch in the action area. The Project would result in 1,055.2 acres of disturbance to creosote bush scrub, 83.2 acres of disturbance to desert wash woodland, and 42.0 acres of disturbance to desert sand dunes. Urban/ruderal and agricultural would receive 442.6 acres and 278.7 acres of impacts, respectively. The total project would affect approximately 1,710 acres of non-wetland. Approximately 717 acres would be newly disturbed; the rest of the acreage was impacted during the construction of the A-line. Approximately 109 acres would be required for operation of the proposed facilities and the remaining 1,600 acres would be restored to the extent possible and allowed to recover to its former state. Approximately 36 acres of wetlands would be disturbed as well.

#### *Desert Tortoise*

##### Direct Effects

Construction and maintenance of the North Baja Pipeline Expansion Project could result in harm, harassment, and mortality to desert tortoises in and near the project right-of-way. Desert tortoises entering the right-of-way during construction could be crushed by construction equipment. Tortoises could fall into the trench excavated during construction and be killed, injured, or trapped. Tortoises suffer harassment when they are relocated or otherwise affected by construction activities. During construction of the A-line, one tortoise was reported to be crushed as a result of construction activities and 15 tortoises were relocated. Similar take is expected to occur during construction of the B-line.

Approximately 1,138 acres of potential desert tortoise habitat (creosote bush scrub and desert wash woodland) would be temporarily impacted. Though temporary impacts do not permanently render the habitat unusable, the desert may take decades if not longer to recover to a pre-disturbance state and until then would be more limited in its ability to support desert tortoise. The loss of perennial shrubs decreases the amount of cover for tortoises. Burrows may be crushed and rendered unusable. Invasive or “pioneer” plants, which may be less nutritious for tortoise, may become more common because of soil disturbance. Soil compaction can also discourage annuals that tortoise feed on. Thus, temporary disturbance has long-lasting consequences. Approximately 1 acre will be permanently impacted (in addition to permanent impacts from the A-line) in tortoise habitat during operation.

Approximately 237 acres of new disturbance would occur in desert tortoise habitat. This habitat disturbance would be offset at a 1:1 ratio for purchase of land within desert tortoise habitat that will be managed for conservation of the species.

### Indirect Effects

Pipeline construction could encourage growth of invasive species. In the past century the Mojave and Colorado Deserts have been invaded by several exotic species of annual plants. These invasive plants have two effects on the desert tortoise: they increase wildfire frequency and they alter the annual plant community that tortoises feed on.

Proliferation of invasive plants has resulted in larger and more frequent fires in the deserts of the southwest (Brooks and Esque 2002). The desert tortoise and Mojave and Colorado Deserts are not adapted to frequent fires and are negatively affected by fire. Fire may directly kill tortoises (Esque et al. 2003, Lovich and Daniels 2000) or may result in altered vegetation attributes (Esque et al. 2003). Since tortoises are thought to be selective of the vegetation they consume to maintain proper mineral balance (Oftedal 2001), fire-altered vegetation attributes may be undesirable for the desert tortoise. The alien grasses *Schismus barbatus* and *S. arabicus* (Mediterranean grass or split grass) and *Bromus rubens* (red brome) appear to be the primary facilitator of increased fire frequency because the dead plants may remain for many years and create a fuelbed for fire to cross between shrubs.

The invasion of exotic species has also changed the annual plant community that desert tortoises rely on for food. Exotic species are present in larger numbers than native species and usually form the bulk of the annual plant community biomass (Brooks 2000), likely because they out-compete native species (Brooks 2000). The primary exotic species of concern are *Schismus* spp., filaree (*Erodium cicutarium*), and red brome (*Bromus rubens*). Mediterranean grass is ubiquitous in the Mojave and Colorado Deserts where it occurs as a carpet covering the desert floor in wet years. Red brome is primarily confined to the Mojave Desert and also grows primarily under the canopy of shrubs like creosote, whereas Mediterranean grass grows in the open. Filaree, a forb, in contrast to the two previous grasses, is ubiquitous in both deserts and has been present probably since the 1600s while the two grasses have only become widespread in this century (Brooks and Esque 2002). *Schismus* spp. have relatively low nutritional value to tortoises (Oftedal et. al. 2002) and is often bypassed by foraging juvenile desert tortoises despite its overwhelming availability (Oftedal et. al. 2002). Filaree may be a significant part of the diet and appears to be somewhat nutritious early in its phenology (Oftedal 2002), but is not a preferred food (Jennings 1993). A nutritionally poor diet of invasive plants, especially grasses, may contribute to tortoises' susceptibility to upper respiratory tract disease (Tracy et al. 2004, Jacobson et al. 1991). Red brome (*Bromus rubens*) was not eaten by the desert tortoise at all in one study (Avery and Neibergs 1997) but has been considered a major food item for tortoise (Oftedal 2002). Experimental thinning of Mediterranean grass and red brome resulted in higher densities, biomass, and species richness of native annuals in one experiment (Brooks 2000). Mediterranean grass and red brome likely out-compete native annuals because of faster uptake of water and nitrogen (Brooks 2000). Saharan mustard is another common invasive (Sanders and Minnich 2000).

Surveys after construction of the A-line found that invasive species had not spread beyond pre-construction conditions, thus the mitigation measures were thought to be successful. The same mitigation measures would be used during B-line construction and restoration.

Ravens have been known to prey on young tortoises (Boarman 2002). Ravens are thought to have increased in number in the Mojave Desert by 1,500 percent in recent decades (Kristan and Boarman 2003). Trash would be the main attractant for ravens. Proper disposal of trash as described in conservation measure 8 would likely decrease the attractiveness of the project to ravens. The project would not be expected to cause an increase in ravens in the action area.

OHVs may crush tortoises or their burrows. OHVs may degrade habitat by destroying vegetation. The potential for the cleared right-of-way to be used by OHVs will be decreased by the use of "vertical mulch" to block access points. This method has been largely successful on the A-line.

#### Desert Tortoise Critical Habitat

An estimated 358 acres of the Chuckwalla Critical Habitat Unit would be impacted by the proposed project, of which 106 acres would be new disturbance. Compared to the size of the



Critical Habitat Unit (1,020,600 acres) the impact is relatively small at 106 acres of new disturbance and 358 acres of total disturbance. Impacts would be offset by compensation paid to the BLM that would be used to buy tortoise habitat.

As discussed above, invasive species can reduce the suitability of habitat for desert tortoise. As discussed above, the project would not be expected to increase the spread of invasive species in the action area.

### *Peirson's Milk-vetch*

#### Direct Effects

Milk-vetch plants and seeds can be damaged, uprooted, buried or otherwise killed or injured during construction activities.

The number of standing plants that may be affected by the project is highly dependent on the amount of rainfall that year. If there is little rainfall, few milk-vetch will sprout and hence few would be damaged by construction activities. If there is substantial rainfall, a large number of milk-vetch may be harmed during construction. Inevitable mixing of the topsoil during excavation and replacement above the finished pipeline could bury seeds too deep to germinate successfully, however, removal and stockpiling of the topsoil will aid in avoiding burial of seeds too deep for germination. Because the project area inhabited by milk-vetch is highly impacted by OHVs, the project is unlikely to have a measurable effect on the milk-vetch population.

#### Indirect Effects

Modification of the habitat could have subtle effects on milk-vetch in and near the right-of-way. Sand dunes do have a cryptogamic flora that would be disturbed by the project. The sand compaction could be increased. Slope and aspect are important to Peirson's milk-vetch and post-construction conditions could be unsuitable for milk-vetch.

### CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Although segments of the proposed project alignment are privately held, the alignment is predominantly surrounded by public lands. Consequently, most activities reasonably expected to occur in the foreseeable future will have direct Federal involvement. However, the area's relative accessibility, in conjunction with recreational opportunities by local natural attractions such as the Colorado River, Algodones Dunes, and other areas, will likely continue to attract

more recreational enthusiasts. Recreationists will likely continue to cause degradation of desert tortoise habitat and direct impacts to desert tortoise. OHV enthusiasts will likely continue to impact Peirson's milk-vetch individuals and habitat in the Imperial Sand Dunes. The overall effect of these activities is difficult to determine because data are lacking.

## CONCLUSION

After reviewing the current status of the desert tortoise and Peirson's milk-vetch, the environmental baseline for the action area, effects of the proposed project, and cumulative effects, it is our biological opinion that the proposed project, as proposed, is not likely to jeopardize the continued existence of the desert tortoise or Peirson's milk-vetch. The proposed project crosses designated desert tortoise critical habitat in the Eastern Colorado Desert Recovery Unit and we conclude that the proposed action does not adversely modify critical habitat.

The Service concludes that the proposed action is not likely to jeopardize the continued existence of the desert tortoise and its critical habitat for the following reasons:

1. The number of tortoises potentially affected by construction of the B-line represents a small percentage of the desert tortoise population in the Eastern Colorado Recovery Unit. Loss of tortoises associated with construction and operation of the proposed North Baja Pipeline Expansion Project does not appreciably reduce the size of the tortoise population throughout the remainder of the recovery unit.
2. Habitat acreage associated with the final footprint of the proposed project represents a small percentage of tortoise habitat available in the Eastern Colorado Recovery Unit and critical habitat in the Chuckwalla Critical Habitat Unit. Approximately 1 acre of desert tortoise habitat would be permanently impacted by the project. Approximately 358 acres of critical habitat would be impacted, of which 108 acres would be newly impacted. Though the environmental baseline suggests that disturbances and impacts to desert tortoises in the area are of increasing concern, we do not believe that the incremental habitat change that would result from this project would preclude long-term survival or recovery or adversely modify critical habitat.
3. Proposed conservation measures would reduce direct take of desert tortoises and would reduce long-term impact to tortoise habitat.

The Service concludes that the proposed action is not likely to jeopardize the continued existence of Peirson's milk-vetch for the following reasons:

1. The habitat affected is heavily impacted because of its proximity to campgrounds, recreational areas, and Interstate 8, and likely supports an impoverished Peirson's milk-

vetch seedbank and standing cohort. Thus the area is likely of small importance to the species' survival and recovery.

2. The habitat area involved is a small percentage of the area available for the species.

## INCIDENTAL TAKE STATEMENT

Section 9 of the Act, and Federal regulation pursuant to section 4(d) of the Act, prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the FERC so that they become binding conditions of any grant or permit issued to North Baja, as appropriate, for the exemption in section 7(o)(2) to apply. The FERC has a continuing duty to regulate the activity covered by this incidental take statement. If the FERC fails to adopt and implement the terms and conditions or fails to require North Baja to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit, grant, and construction contract document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, North Baja must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)].

Sections 7(b)(4) and 7(o)(2) of the Act generally do not apply to listed plant species. However, limited protection of listed plants from take is provided to the extent that the Act prohibits the removal and reduction to possession of Federally listed endangered plants or the malicious damage of such plants on non-Federal areas in violation of State law or regulation or in the course of any violation of a State criminal trespass law.

### *Amount or Extent of Take Anticipated*

The Service anticipates 22 individual desert tortoise would be taken as a result of the proposed action. Based on survey reports and the amount of take that occurred during construction of the

A-line, the incidental take in the form of accidental injury, death, or harassment is expected to be:

1. Accidental injury to or death of no more than two (2) tortoises as a direct or indirect result of pipeline construction activities.
2. Harassment by relocation of no more than eighteen (18) tortoises within the project right-of-way and access roads.
3. After completion of construction, impacts to desert tortoises including incidental take associated with vehicle use for pipeline maintenance and weed control is expected to occur. A maximum of two (2) tortoises may be harmed or killed as a result of pipeline maintenance.

#### *Reasonable and Prudent Measures*

The following reasonable and prudent measure is necessary and appropriate to minimize impacts of incidental take of desert tortoise.

1. Project biologists and consultants shall be allowed to communicate freely with the Service regarding implementation and compliance with the biological opinion.
2. Ensure that take levels are not exceeded and reinitiation is promptly executed, if necessary.

#### *Terms and Conditions*

To be exempt from the prohibitions of section 9 of the Act, the FERC must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

1. The following terms and conditions shall implement reasonable and prudent measure 1:
  - a. Project biologists and consultants and others involved in the project shall be allowed to communicate freely with the Service verbally, by electronic mail, or written letter regarding implementation and compliance with the biological opinion. The project proponents shall submit to FERC and the Service all draft and final reports from project biologists and consultants that pertain to the listed species addressed in this opinion.
  - b. The Service shall be notified by electronic mail when the project begins.

- c. The Service shall be notified within 2 working days of violations of the minimization and conservation measures and terms and conditions of this biological opinion.
- 2. The following terms and conditions shall implement reasonable and prudent measure 2:
  - a. The Service shall be notified within two working days of fatal take of desert tortoise.
  - b. The Service shall be notified within two working days if the number of non-fatal take reaches 17.

The Service believes that no more than 22 desert tortoise would be incidentally taken as a result of the proposed action. The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The Federal agency must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

#### *Disposition of Dead or Injured Desert Tortoises*

The Service's Carlsbad Fish and Wildlife Office [(760) 431-9440] must be notified within three working days should any desert tortoise be found injured or dead on the project site. A written notification must be made within five calendar days and include the date, time, and location of the discovered animal/carcass, the cause of injury or death, and any other pertinent information. Injured animals should be transported to a qualified veterinarian or certified wildlife care facility and the Service informed of the final disposition of any surviving animal(s). All dead specimens shall be submitted to educational/research institutions possessing the appropriate State and Federal permits. Failing deposition to an available institution, the carcass should be marked, photographed, and left in the field.

#### REINITIATION NOTICE

This concludes formal consultation on the North Baja Pipeline Expansion Project as outlined in the initiation request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that

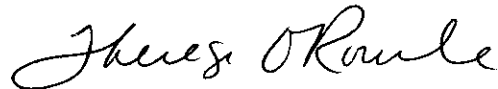
Michael J. Boyle (FWS-ERIV-5068.2)

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may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions regarding this consultation, please contact Tyler Grant of my staff at (760) 431-9440.

Sincerely,

A handwritten signature in black ink, reading "Therese O'Rourke". The signature is written in a cursive, flowing style with a large initial 'T' and 'O'.

Therese O'Rourke  
Assistant Field Supervisor

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